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DIV. OF OIL, GAS & MINING

ERRC-07-03

January 13, 2003

Jon Cherry
8315 West 3595 South
P.O. Box 6001
Magna, Utah 84044-6001

Re: **Kennecott North End Sites on the Environmental On/Off-site Assessment list, status update.**

Dear Mr. Cherry,

The Utah Division of Environmental Response and Remediation (DERR), has enclosed a list of the outstanding north end Environmental On/Off-site Assessment (EOA) sites and their current status. DERR has determined that the north end sites designated a final "No Further Action" (NFA) status with this letter could be included in the Record of Decision (ROD) for the north end investigation. Sites that have been designated a conditional NFA based upon the timely submittal of information will be evaluated upon receipt and review of the documentation by DERR.

For the sites that have been provided a conditional NFA status based upon compliance with various permit programs, KUCC needs to stay in compliance with the permits over time. The current permits applicable to the sites herein were issued under the Ground Water Protection Program (GWPP) overseen by the Utah Division of Water Quality (DWQ), the Utah Pollution Discharge Elimination System (UPDES) overseen by DWQ, the air quality standards program overseen by the Utah Division of Air Quality (DAQ), and the mining reclamation program overseen by the Division of Oil, Gas and Mining (DOGM). If KUCC fails to comply with the permit requirements, the corrective action plan listed within the permit is the regulatory response that should be applied. If KUCC fails to respond appropriately to the permit failure and/or ineffectually follows the corrective action plan, the site may be readdressed as an EOA project under CERCLA.

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If you have any further questions, feel free to contact me at (801) 536 – 4282.

Sincerely,

A handwritten signature in dark ink, appearing to read "Douglas C. Bacon", with a long horizontal flourish extending to the right.

Douglas C. Bacon, Project Manager
Division of Environmental Response and Remediation

DCB/klv

Enclosure

cc: Dr. Eva Hoffman, U.S. Environmental Protection Agency Region VIII
Ed Hickey, Utah Division of Water Quality
Kim Shelley, Utah Division of Water Quality
Rob Leishman, Utah Division of Air Quality
Tom Munson, Utah Division of Oil, Gas and Mining
Patti Pavey, M.S., Director, Salt Lake Valley Health Department

**DERR Comments on the Site Status for Various North End Environmental On/Off-site
Assessment Projects**

Priority One Sites:

(1) Lower Kessler and Upper Kessler Canyon Drainages (#136.0): DERR received a copy of the KUCC letter, dated March 5, 2001, which presents the analytical data for soil samples collected behind the flood control dams. None of the samples exceeded the action levels for arsenic, cadmium, lead and selenium as set in the North Facilities Soils Work Plan (NFSWP). These action levels are based upon default risk concentrations for an industrial land use (ILU) scenario. DERR also received the KUCC report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B – Smelter Area Post Removal Post Reclamation dated April 2002, which details the cleanup activities in Lower Kessler Canyon.

The Ecological Risk Assessment (ERA) for the Northern Oquirrh Mountains, dated October 1996, stated that there were several species of herbivorous and insectivorous animals that exceeded risk quotients for an observable effect. The document also reported that the species of plant called "White Top," was known to accumulate selenium within its structure, making it potentially bio-available to herbivorous animals. At this time, this site is designated a conditional "No Further Action" (NFA) status under the Environmental On/Off-site Assessments (EOA) project. DERR conditions the NFA status to the following: (1) KUCC must continue to control plant species with the ability to uptake contaminants (i.e., selenium), (2) KUCC needs to continue to periodically observe the animals listed in the ERA document as exceeding their risk quotients for observable effects, and (3) individual sites in the lower canyon that were capped because remediated surfaces exceeded the industrial land use (ILU) standards, need to be maintained and protected against breaches of the cap.

Priority Two Sites:

(1) Magna Tailings Pond (#101.0): The Magna Tailings Pond site is an active facility used to store tailings from the current tailings pipeline. The tailings pond will also receive the treatment concentrates from the cleanup of the Southwest Jordan Valley ground water plumes. The tailings pond is composed of one inactive facility, the "South Tailings Impoundment", and two active facilities, the "North Tailings Expansion Pond" and the "Arthur Step-back Repository." Various agency (DWQ, DAQ, DOGM) permits are used to regulate the activities at the tailings pond facility. At this time, the site is designated a conditional NFA status subject to compliance by KUCC with the requirements listed under the DWQ Tailings Impoundment Ground Water Discharge Permit No. UGW 350011, the DWQ UPDES permit No. UT0000051, the Kennecott Utah Copper Corp. North Concentrator, Power Plant, Lab and Tailings Impoundment DAQ air permit No. 3500346001, and the DOGM Reclamation permit.

(2) Black Rock Canyon (#139.0): Black Rock Canyon was potentially impacted by historical smelter air emissions. Current sample data show that the concentrations of lead and arsenic in the surface soils meet the ILU cleanup standards as set in the North Facilities Soils Work Plan (NFSWP). A soil and gravel operation has been proposed for the canyon. Unrestricted use soil standards have been set for both lead (<500 ppm or parts per million) and arsenic (<50 ppm) in order for the material to be exported as product off-site. Contours of the canyon and concentrations of contaminants may be changed during the course of this operation.

At this time, Black Rock Canyon is designated a conditional NFA status based upon DERR's approval of the reclamation plan and compliance by the lessee (Monroc, Inc.) with the reclamation requirements. The reclamation plan and other operational documents should explain how soils with elevated concentrations of the contaminant of concern (arsenic) would be prevented from migrating or being exported off-site, both during operations and at the cessation of operations. This conditional NFA status is subject to revocation if the reclamation plan is found to be deficient and the concerns cannot be resolved, or if the Lessee fails to comply with the plan.

(3) Magna Ground Water Plumes (a.k.a. Northend Ground Water Plumes) (#141.0): There are two plumes associated with this project. One is located downgradient of the current refinery, containing selenium as the contaminant of concern (COC). The other is located downgradient of the current smelter, containing arsenic as the COC. Both plumes have been investigated under CERCLA and finalization of the remedial investigation and feasibility study (RI/FS) reports has been completed. The RI/FS documents, as well as the north end Record of Decision (ROD, September 2002), delineate the requirements for remediation as well as compliance standards. The proposed remedy has two parts: (1) interception and treatment of water from springs and wells, and (2) in-situ biological treatment. Part 1 has been implemented, while Part 2 is being tested on a pilot scale. The Magna Ground Water Plumes are designated a conditional NFA status at this time. Upon successful implementation of the chosen remedy and attainment of the compliance standards, the site status will be reevaluated.

Priority Three Sites:

(1) Utah Copper Power Plant (#78.0): The KUCC letter dated March 20, 2001 provides the confirmation sampling report for the PCB removal associated with the #1 Pump house, at the power plant. The report entitled PCB Concrete Investigation for Kennecott Utah Copper #1 Pump house Power Plant (prepared by Westinghouse Remediation Services - Western District, and dated September, 1992), documents that each sample area was determined to be "Non Detect" for PCBs. This site is currently located within the tailings impoundment ground water discharge permit area. Mr. Jon Cherry (KUCC) stated on Feb. 27, 2001 that the area of discoloration was determined to be tailings material that was removed to the tailings impoundment. Pursuant to the above mentioned report and the verbal assurance from KUCC that the tailings material was removed, a final NFA status is designated at this time.

Other Priority Sites (priority unknown):

(1) Great Salt Lake (#140.02): The Great Salt Lake (GSL) was investigated under an ERA, and selenium was determined to be the metal of most concern. The ERA determined that the samples of sediment, brine shrimp, brine shrimp eggs, invertebrates, and bird eggs for the south end waters of the GSL and associated wetland areas were relatively low for exceedances beyond the recommended dietary risk thresholds of selenium (KUCC Final Draft RI, Version B 8/4/00). At this time, DERR is designating this site a conditional NFA status.

The NFA status is conditioned to the completion of the ground water investigation, implementation of the selected remedy, and the continued compliance by KUCC with the DWQ Tailings Impoundment Ground Water Discharge Permit No. UGW 350011, the Smelter Ground Water Discharge Permit No. UGW 350008, the Refinery Ground Water Discharge Permit, and the DWQ UPDES permit No. UT0000051.

(2) Great Salt Lake (GSL) Shoreline (#140.03): The U.S. Bureau of Reclamation (US BOR) investigated the GSL shoreline in 1995 and the results of the investigation were reported in a document entitled Soil and Sediment Sampling, South Arm Beach Area of the Great Salt Lake

dated December 1995. From KUCC's letter dated March 20, 2001, it appears as if the human health concerns may have been resolved. DERR does not have a copy of this report and would like to have a copy for our files. At this time, DERR is designating this site a conditional NFA status.

The NFA status is conditioned to the completion of the ground water investigation, implementation of the remedy, and the continued compliance by KUCC with DAQ's Kennecott Utah Copper Corp. North Concentrator, Power Plant, Lab and Tailings Pond permit No. 3500346001 and Kennecott Utah Copper Corp. Smelter and Refinery permit No. 3500030001, DWQ's Kennecott Utah Copper Corporation UPDES permit No. UT0000051, DWQ's Kennecott Utah Copper Corporation Tailings Impoundment Ground Water Discharge Permit No. UGW 350011, and DWQ's Refinery Ground Water Discharge Permit, and Smelter Ground Water Discharge Permit No. UGW 350008. KUCC is also requested to submit a copy of the BOR report for our files.

Tooele County Sites:

Priority Three Sites:

(1) Star Mill (#63.0): KUCC stated in their letter dated March 20, 2001, that the remaining structures (water flume, access road) and the current pumping activity at the portal were not associated with the contamination issues. The current on-site structures provide water to Tooele City. Mr. Tom Munson, DOGM, stated that as of December 12, 2001, 17.3 acres including this site and other areas in Pine Canyon remained to be reclaimed. A reclamation bond of \$120,800 is currently held by DOGM. At this time, DERR is designating this site a conditional NFA status.

The condition of this NFA status is KUCC's compliance with the requirements of the DOGM reclamation bond. Upon receipt of a letter from DOGM stating that the bonding requirements have been met and the site has been reclaimed to their specifications, the site status will be reevaluated.

(2) Elton Tunnel (#130.0): As stated in the KUCC letter dated March 20, 2001, Anderson Engineering unearthed the portal for the Elton Tunnel. It was reported that there was no "appreciable flow" at the time of the excavation. KUCC stated that since there was no flow of water, there were no pathway aspects to be considered. At this time, this site will remain open under the EOA project until review of the findings of the report can be completed. Please provide the documentation of the excavation activities and the report stating there was no appreciable flow for review.

It is noted that during review of the KUCC Mine Closure Plan, the Elton Tunnel was included as a way to redirect water out of the Bingham Pit during dewatering activities. DWQ and DOGM are currently reviewing the pit closure issues. If this site or other EOA sites will be used to assist KUCC in its mine closure requirements, DERR should be contacted to determine if there are any outstanding or new issues related to the proposed activities, under CERCLA.

(3) Pine Canyon (#131.00): Star Mill and other mine tunnel shafts are located within this canyon. Currently, DOGM has updated the value of the reclamation bond for the canyon (\$120,800 as of December 12, 2001). As stated in comment #1 for Tooele County Sites, DERR is designating this site a conditional NFA status until the bond requirements are met.

(4) Anaconda Carr Fork Tailings Pond (#68.0): This site is currently still open under the EOA project. It has been reported that the site is located within the boundaries of the International Smelter (INS) site that is being investigated under separate CERCLA action. Please explain if the site is actually on property owned by KUCC. Please provide a map referencing the location of this site. Upon determination of the site location, DERR will evaluate the site status.

(5) Copper Boy Tunnel (#135.060): The KUCC letter dated April 1, 2002 documents that this site was developed as a clean water supply tunnel for the INS. The tunnel was driven to supply drinking water and acts like a horizontal well. The INS site is being addressed under a separate CERCLA action. This former Anaconda Company water source and its associated water right, along with the respective property were purchased by KUCC from Atlantic Richfield Company (ARCO) in 1985.

The Copper Boy Tunnel is located in the upper Baltimore Gulch southeast of the Anaconda Production shaft in the SW ¼ of the SE ¼ of Section 28, T 3 S, R 3 W SLBM. The water right for domestic and industrial uses is listed in the Division of Water Rights database under #15-637. The tunnel, which measures six feet wide, five feet high, and 1,400 feet long is used to collect and transport culinary water. Currently the water is piped to the INS site. The tunnel is located in an area that did not have a significant amount of mineralization (conversation with Mr. Jon Cherry, KUCC on September 4, 2002). The overburden material at the portal and surrounding the tunnel is not acid generating material, and hence should not pose a threat to downgradient receptors. Based upon the above information and the current use of water flowing on-site, this site is designated a final NFA status.

(6) Spring Canyon (#135.070): The KUCC letter dated April 1, 2002 documents that this site was developed as a clean water supply tunnel for the INS. The tunnel was driven to supply drinking water and acts like a horizontal well. The INS site is being addressed under a separate CERCLA action. This former Anaconda Company water source and its associated water right, along with the respective property were purchased by KUCC from ARCO in 1985.

The Spring Canyon sources are located at the mouth of Spring Canyon, which is approximately two miles west of the Truck Shop in Pine Canyon. There are three clean water tunnels in the NE ¼ of the NE ¼ of Section 28, T 3 S, R 4 W (SLBM), each containing a water right. The three tunnels and the respective water rights include: (1) Hard Rock Tunnel, water right ID# 15-1419, (2) McBride Tunnel, water right ID# 15-1420, and (3) Main Tunnel, water right ID# 15-1421. All three were driven to collect water for the INS site. The Hard Rock Tunnel is four feet wide, six feet high, and 321 feet long. The McBride Tunnel is four feet wide, six feet high, and 65 feet long. The Main Tunnel is four feet wide, six feet high, and 1,092 feet long. The tunnels are located in areas that did not have a significant amount of mineralization (conversation with Mr. Jon Cherry, KUCC on September 4, 2002). The overburden material at the portals is not acid generating and should not pose a threat to downgradient receptors. Based upon the above information and the current use of water flowing on-site, this site is designated a final NFA status.

(7) Upper Bruneau Tunnel (135.080): The KUCC letter dated April 1, 2002 documents that this site was developed as a clean water supply tunnel for the INS. The tunnel was driven to supply drinking water and acts like a horizontal well. The INS site is being addressed under a separate CERCLA action. This former Anaconda Company water source and its associated water right, along with the respective property were purchased by KUCC from ARCO in 1985.

The Upper Bruneau Tunnel is located in Pass Canyon, approximately 2½ miles northeast of the INS site and in the NW ¼ of the NW ¼ of Section 9, T 3 S, R 3 W SLBM. The tunnel collected

clean water and piped it to the INS site. The water right is listed under the water right ID# 15-1653. The land containing this tunnel was traded to the Bureau of Land Management. The tunnel is located in an area that did not have a significant amount of mineralization (conversation with Mr. Jon Cherry, KUCC on September 4, 2002). The overburden surrounding the tunnel portal is not acid generating and should not pose a threat to downgradient receptors. Based upon the above information and the current use of water flowing on-site, this site is provided a final NFA status.

(8) Helen B. Tunnel (#135.090): The KUCC letter dated April 1, 2002 documents that this site was developed as a clean water supply tunnel for the INS. The tunnel was driven to supply drinking water and acts like a horizontal well. The INS site is being addressed under a separate CERCLA action. This former Anaconda Company water source and its associated water right, along with the respective property were purchased by KUCC from ARCO in 1985.

The Helen B. Tunnel is located in the South Fork of Swenson Canyon, approximately 1½ miles east northeast of the INS site and in the NW ¼ of the SE ¼ of Section 17, T 3 S, R 3 W (SLBM). The tunnel is 750 ft. long and was used to capture clean water under water right ID# 15-1651. The water was piped to the INS site. The tunnel is located in an area that did not have a significant amount of mineralization (conversation with Mr. Jon Cherry, KUCC on September 4, 2002). The overburden surrounding the tunnel portal is not acid generating and should not pose a threat to downgradient receptors. Based upon the above information and the current use of water flowing on-site, this site is designated a final NFA status.

EOA Sites Listed As Being Investigated Under The North Facilities Soils Work Plan:

Priority One Sites:

(1) Flue Dust Disposal Area (#75.0): The site is located in the Lower Kessler Canyon drainage. The site was characterized and cleaned up pursuant to the requirements listed in the NFSWP. The work activity was reported in KUCC's report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B- Smelter Area Post Removal Post Reclamation Report dated April 2002. Pursuant to the information provided in the above reporting documents, the site is designated a final NFA status.

(2) Railroad Flue Dust Deposit (#76.0): Ms. Kate Johnson (DERR) designated a conditional NFA status in a letter dated July 14, 1998. The status was conditioned to the removal of the rail lines and other infrastructure and characterization of the site upon cessation of operations. If needed, impacted site material was to be remediated. Please report on these activities upon their completion.

(3) Refinery Evaporation Ponds (#77.0, also listed as RO2): Between 1950 and 1974, KUCC operated an evaporation pond behind the refinery building. Spent electrolyte was discharged to the ponds at a rate of several gallons per minute. In 1994 a RI was performed and samples demonstrated elevated levels of arsenic and selenium. In May or June 1997 contaminated surface soils were excavated and hauled to the Arthur Step-Back Repository. Additional soil removal was performed when post removal samples exceeded the action levels for total arsenic and selenium. Removal depths ranged between two - three feet. As reported in the KUCC's report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B- Refinery Area, Post Removal/Reclamation Sampling Reports Volume 2 dated April 1998, other contaminated soil on-site was capped in 1998. The engineered cap was constructed between September and December 1997, but construction was unable to be completed because of weather.

In April 1998 further excavations were performed on-site. Contamination was left at depth and an engineered cap was constructed to prevent infiltration of surface water and leaching of the contaminants in the underlying soils. Pursuant to the information provided in the referenced KUCC report, DERR is designating this site a conditional NFA status. Please submit a copy of the map that delineates the capped portion of the site. KUCC is requested to maintain and protect the cap against breaches.

(4) ASARCO Smelter, KUC Smelter (#96.0): The ASARCO Smelter was investigated during the Remedial Investigation and Feasibility Study for the north end. The smelter was built in 1905 and operated until the late 1950's, when Kennecott took ownership and shut it down. The current KUCC smelter occupies the location of this historic facility. The current smelter is subject to both DWQ's Smelter Ground Water Discharge Permit, No. UGW 350008, and DAQ's Kennecott Utah Copper Corp. Smelter and Refinery permit No. 3500030001. At this time, DERR is designating this site a conditional NFA status.

The conditional NFA status is designated pursuant to KUCC's continued compliance with DWQ and DAQ permits and the completion of the soil cleanup activities around the current smelter site. Upon mine closure, the site soils existing under the current smelter infrastructure will need to be characterized and remediated if necessary. Upon receipt and review of these reports, DERR will reevaluate the site status.

(5) Smelter Area Soils, East Yard Site (#96.030 and #SO2): This site was investigated as part of the north end RI/FS Study. Characterization and remediation of these soils was scheduled for completion Spring, 2001. KUCC's report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that the removal samples demonstrated that the soils with elevated concentrations of the COCs were removed except in one location. This location was capped because the concentration of arsenic in the remaining soils exceeded the ILU standards established in the NFSWP. At this time, DERR is designating this site a conditional NFA status. KUCC is requested to submit a copy of the map of the capped area that delineates its location. KUCC is also requested to maintain and protect the cap against breaches.

(6) Smelter Area Soils - Old Smelter Soils (#96.040 and #SO8): This site is the location of the old Noranda Smelter. Non-operational areas have had soils characterized and remediated. DERR agrees with KUCC's assessment in the March 20, 2001 letter that site closure should be dependent upon post-reclamation sampling and submittal of the final activities report. KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that 24,333 cubic yards of contaminated material were removed but some material with elevated concentrations of lead and arsenic was left in place and capped. At this time, the site is designated a conditional NFA status. Please submit a map of the capped area that delineates its location. KUCC is requested to maintain and protect the cap against breaches. KUCC is also requested to remain in compliance with DEQ permits in areas of current operations. Upon cessation of current smelter operations and demolition of on-site infrastructure, areas not previously investigated will need to be characterized and remediated (if necessary). Upon receipt and review of the reports for these activities, DERR will reevaluate the site status.

(7) Smelter Area Soils - Kessler Canyon, (#136.00 and #S09): KUCC has completed the partial removal of contaminants on-site. Some contaminated soils near utility corridors were left in place. These areas and the excavated areas were covered with a minimum of 18 inches of fill amended with biosolids and seeded. This work activity is reported in the KUCC report entitled

North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B-Smelter Area Post Removal Post Reclamation Report dated April 2002. However, pursuant to information developed in the ecological risk assessment, DERR is designating this site a conditional NFA status. Please see comment #1 under Priority One Sites for the conditions of this site status.

(8) Smelter Area Soils - Return Canal (#96.050 #S11): To date, 95% of the canal has been characterized and remediated. A small portion of the canal near Pump Station #4 remains to be characterized. Characterization and remediation activities for the remainder of the canal, was scheduled to take place the spring of 2001.

Pump Station #4 is located at the east end of the return canal. It is currently physically separated from the return canal by a dike. The soils associated with the pump station will not be characterized until current mine operations cease.

Pursuant to the information provided in the January 2002 KUCC post removal report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B-Smelter Area Post Removal Post Reclamation Report, DERR is designating a conditional NFA status to this site. Upon completion of the characterization and remediation (if needed) work for the soils associated with the pump station at mine closure, DERR will reevaluate the site status.

(9) Smelter Area Soils - Weak Acid Corridor (#97.01 and #S12): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that two characterization samples had concentrations of arsenic above the ILU standard. The elevated concentration of arsenic is suspected to be from slag, which comprises the bedding material that was sampled. At this time, the site is designated a conditional NFA status. The site must remain in compliance with applicable DEQ permits and upon mine closure undergo demolition of site structures, characterization of the site and remediation of impacted media (if needed). Upon submittal and review of the activity reports, DERR will reevaluate the site status.

(10) Smelter Area Soils - Weak Acid Lift (#97.02 and #S13): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that at least one post removal sample exceeded the arsenic ILU standard. The report states that the majority of the contaminated soil was removed but a portion was left in place and capped. At this time, the site is designated a conditional NFA status. Please submit a map of the capped area, which delineates its location. KUCC is requested to maintain and protect the engineered cap from breaches.

(11) Smelter Area Soils - Slag Tailings Pipeline (#96.06 and #S15): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that two samples out of 33 that were collected had concentrations of arsenic above the ILU standard. The elevated concentration of arsenic is suspected to be from slag, which comprises the bedding material that was sampled. At this time, the site is designated a conditional NFA status. The site must remain in compliance with applicable DEQ permits and upon mine closure undergo demolition of site structures, characterization of the site and remediation of impacted media (if needed). Upon submittal and review of the activity reports, DERR will reevaluate the site status.

(12) Smelter Area Soils - Slag Pile Soils/Lagoon (#S16): KUCC has completed the removal activities. Some contaminated soil was left in place and was covered with a minimum of three feet of fill and seeded (KUCC report entitled North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID#4B- Smelter Area Post Removal Post Reclamation Report Volume 2 dated April 2002). According to KUCC's summary report (North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002), all contaminated sediment was removed from the site. During October and November 2001, native wetland plants were planted along all shorelines that did not have established phragmites colonies and/or slag. Further reclamation of the site included the construction of a consolidated fresh water pond for storage of operational make-up water, improved wetland habitat with the construction of islands, improved shoreline, and the reconfiguration of the surrounding wetlands and culverts to allow the Lagoon area to be a water flow system. At this time, DERR is designating this site a final NFA status.

(13) Smelter Area Soils - Railroad Yard Soils (#96.07 and #S17): The rail tracks have been used historically to transport copper concentrate between south end and north end facilities. KUCC reported that there is some concentrate spillage between the tracks due to loading and unloading of ore. Though ground water issues have been and continue to be addressed by DWQ's Smelter Ground Water Discharge Permit No. UGW 350008, soil may still be contaminated due to residual concentrate. At this time, this site will remain open under the EOA project until the site can be characterized and remediated, if needed. This activity is scheduled to take place upon cessation of smelter operations. Please update DERR periodically on the timetable for when this work will begin.

(14) Smelter Area Soils - Acid Plant #7 Soils, (#S100): According to Dr. Eva Hoffman's (U. S. Environmental Protection Agency, Region VIII) Historic Sites Background dated May 2002, the site was demolished during the spring of 1996. During the demolition of Acid Plant #7 approximately 16,924 cubic yards of contaminated material were removed. However, a small portion of contaminated soil was left in place. Analysis of post removal samples detected a maximum arsenic concentration of 2130.0 ppm (parts per million) and a maximum lead concentration of 8630.0 ppm (KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002). At this time, DERR is designating this site a conditional NFA status. Please submit a map of the capped area that delineates its location. Upon submittal and review, DERR will reevaluate the site status. KUCC is also requested to maintain and protect the engineered cap against breaches.

(15) Smelter Area Soils - Smelter Lagoon (#102.0): KUCC stated in their letter dated March 20, 2001 that remediation activities were in progress at this site. Remediation was scheduled for completion by the end of the summer of 2001. At this time, the site will remain open under the EOA project until the site remediation documentation is submitted and reviewed by DERR. Upon review of the characterization and post remediation reports, DERR will reevaluate the site status.

(16) Smelter Area Demolition - Gas Handling Area (#S08-S500): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that analysis of the post removal samples detected concentrations of arsenic and lead above the ILU standards. The soil that was left in place during removal activities was capped. The site is currently the consolidated material storage pad for Smelter operations. The site was backfilled with engineered fill, asphalted with a double layer of low permeable mix, and constructed with concrete desilting basins with piping connected to the process water circuit. At this time, the site is designated a conditional NFA status. Please submit a map of the capped

area that delineates its location. KUCC is requested to maintain and protect the engineered cap against breaches and maintain compliance with DEQ permits over the smelter operations.

(17) Smelter Area Demolition - Hot Metals Building (#S08-S200): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that analysis of the post removal samples detected concentrations of arsenic and lead above the ILU standards. The soils left in place were capped with a minimum of 18 inches of fill soil that was amended with biosolids and seeded. The reclaimed surface meets the ILU standards for all COCs. At this time, the site is designated a conditional NFA status. Please submit a map of the capped area that delineates its location. KUCC is also requested to maintain and protect the engineered cap against breaches.

(18) Smelter Area Demolition - Material Handling Building (#S08-S400): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that all contaminated material was removed and analysis of the post removal samples detected no concentrations above the ILU standards. The report further states that the remediated surface was reclaimed and the reclaimed surface soils met the ILU standards for the COCs. At this time, DERR is designating this site a final NFA status.

(19) Smelter Area Demolition - Smelter Powerhouse (#96.08 and #S08-S300): KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, states that analysis of the post removal samples detected concentrations of arsenic above the ILU standards. The soils left in place were capped with a minimum of 18 inches of fill soil that was amended with biosolids and seeded. A crane pad was constructed on-site for use during smelter acid plant shutdowns to retrieve and maintain equipment. The reclaimed surface soils meet the ILU standards. At this time, the site is designated a conditional NFA status. Please submit a map of the capped area that delineates its location. KUCC is requested to maintain and protect the engineered cap against breaches and maintain compliance with DEQ permits over the smelter and acid plant operations.

(20) Acid Plants, Garfield (#97.0): This site has been the location of numerous historic acid plants. Acid Plants #1 and #2 were demolished in 1970, #3 and #4 were demolished in 1975, #5 was demolished in 1983 and between 1989 to 1991, #6 was demolished in 1985 and between 1989 to 1991, #7 (see separate site listing) was demolished during the spring of 1998, and #8 (see separate site listing) was demolished in 1998, (Historic Sites Background, Dr. Eva Hoffman, May 2002). During demolition and remediation of the most recent plants some contaminated material with elevated concentrations of arsenic and lead, were capped on-site (KUCC's North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002). At this time, the site is designated a conditional NFA status. Please submit a map of the capped area that delineates its location. KUCC is requested to maintain and protect the engineered cap against breaches and maintain compliance with DEQ permits over the current acid plant operations.

(21) Acid Storage Facility (#98.0): An acid tank facility located east of the ASARCO Smelter had a tank rupture and release its contents onto the ground. KUCC reported that the site was remediated as part of a corrective action plan approved by the Division of Solid and Hazardous Waste (DSHW). The remediation was reported to DSHW in the document entitled Remediation Summary Report for the Kennecott Utah Copper Smelter Acid Tank Farm dated January 1997. Please provide DERR a copy of this report for our review. Upon receipt and review of the report, DERR will evaluate the status of this site. Until then the site will remain open under the EOA

project. KUCC is requested to maintain compliance with DEQ permits over the current acid generating operations.

(22) Refinery (#99.0 a and b): Except for soil under buildings, site soils around the refinery have been characterized and capping operations are complete. The current refinery site is the location of the footprint of the historic refinery. KUCC reported its activities in the following documents: (1) North Facilities Soils and Wastewater Treatment Plant Ponds Site, Removal Action SSID #4B, Refinery Area Site Characterization Volumes 1 through 5 dated July 1996 and April 1998, and (2) North Facilities Soils and Wastewater Treatment Plant Ponds Site, Removal Action SSID #4B, Refinery Area Site Post Removal and Post Reclamation Volumes 1 through 4 dated July 1996 and April 1998.

The status requirement conditions for selenium plume emanating from underneath the Refinery are covered under the Magna Ground Water Plumes site (ID#141.00). At this time, DERR is designating a conditional NFA status to this site with the following conditions: (1) continue to comply with various DEQ permits, and (2) characterize and remediate (if needed) the soils under the site infrastructure at mine closure.

EOA Sites Listed As Being Investigated Under The North Facilities Soils Work Plan:

Priority Two Sites:

(1) Magna Concentrator (#94.0): The Magna Concentrator was recently reported to have been shutdown; concentrating operations have been entirely shifted to the Copperton Concentrator. This facility was regulated by DWQ under the North Concentrator Ground Water Discharge Permit, No. UGW350015 and by DAQ under the Kennecott Utah Copper Corp. North Concentrator, Power Plant, Lab and Tailings Pond permit No. 3500346001. At this time, DERR is designating this site a conditional NFA status.

The conditional NFA status is designated pursuant to KUCC's continued compliance with DWQ's and DAQ's permits and closure requirements. Upon demolition of site infrastructure and removal of debris, characterization and remediation of the underlying soils exceeding the risk concentrations for the intended land use must be done. DERR will reevaluate the site after these activities have been completed and the appropriate documentation is submitted for review.

(2) Magna Concentrator - Railroad Slope Site (#94.010): Two areas are associated with this site: (1) an area near State Road 201, halfway between the Refinery and the Concentrator, and (2) an area near the Bonneville Gate. KUCC stated in their letter dated March 20, 2001, that the site characterization and reclamation activities were completed. KUCC submitted the following reports: (1) North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Characterization Volume 1 dated July 1996, and (2) North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Post Removal and Post Reclamation Volume 1 dated July 1997.

DERR has reviewed the analytical data provided in both reports. Some contaminated soils near utility corridors were left in place. These areas and the excavated areas were covered with a minimum of 18 inches of fill, amended with biosolids, and seeded. Pursuant to the information in the referenced KUCC report, DERR is designating a conditional NFA status for this site. Please submit a map of the capped area that delineates its location. KUCC is requested to maintain and protect the cap against breaches.

(3) Magna Concentrator - Concentrate Loading Site (#94.02): KUCC stated in their letter dated March 20, 2001, that post-reclamation sampling was scheduled to be completed by September 2001. In November 2001 KUCC reported that site work was completed. Some contaminated soils were left in place near utility corridors. These areas, as well as the excavated ones, were covered with a minimum of 18 inches of fill amended with biosolids and seeded. KUCC submitted the report entitled North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B- Magna Area Post Removal and Reclamation dated November 2001. Pursuant to the information in the referenced KUCC report, DERR is designating a conditional NFA status for this site. Please submit a map of the capped area that delineates its location. KUCC is requested to maintain and protect the cap against breaches.

(4) Magna Concentrator - East Debris Site(#94.03): KUCC stated in their letter dated March 20, 2001, that site characterization and reclamation activities were complete. KUCC submitted the following reports: (1) North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Characterization Volume 1 dated July 1996, and (2) North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Post Removal and Post Reclamation Volume 1 dated July 1997.

DERR has reviewed the sampling data provided in both reports. The site has been cleaned to the recommended industrial use standards as stated in the NFSWP. At this time, the site is designated a final NFA status.

(5) Bonneville Crusher (#95.0): The Bonneville Crusher was recently reported to have been shut down. This facility was regulated by DWQ under the North Concentrator Ground Water Discharge Permit No. UGW350015 and by DAQ under the Kennecott Utah Copper Corp. North Concentrator, Power Plant, Lab and Tailings Pond permit No. 3500346001. At this time, DERR is designating this site a conditional NFA status.

The conditions are: (1) continued compliance with DWQ's and DAQ's permits and closure requirements, (2) upon demolition of site infrastructure and removal of debris, reclamation of the facility should include the characterization of the underlying soils and remediation of soils exceeding the risk concentrations for the intended land use. DERR will reevaluate the site after these activities have been completed and the appropriate reports have been submitted for review.

(6) Bonneville Crusher - Scrap Yard Site (#95.01 and #B01): This site is within the area regulated by DWQ under the North Concentrator Ground Water Discharge Permit No. UGW350015, and was investigated pursuant to the NFSWP. KUCC reports in the North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Characterization Volume 1 dated July 2001, that the contaminants of concern are below the default industrial land use standards as stated in the NFSWP. At this time, DERR is designating this site a final NFA status.

(7) Bonneville Crusher - Gate Hillside Site (#95.02 and #B02): This site is within the area regulated by DWQ under the North Concentrator Ground Water Discharge Permit No. UGW350015, and was investigated pursuant to the NFSWP. KUCC reports in the North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Characterization, Volume 1 dated July 1996, that the site was characterized and found to contain elevated copper concentrations. The site was consolidated, capped, and post removal samples were taken. KUCC, in the North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Post Removal and Post Reclamation Volume 1 dated July 2001, reported that the post removal soil surface did not

contain concentrations of lead, arsenic, cadmium, or selenium above the recommended soil action levels.

At this time, DERR is designating this site a conditional NFA status pursuant to KUCC's continued compliance with DWQ's permit. KUCC is also requested to explain why post-remedial samples were not analyzed for copper. Previous site characterization data demonstrated that the list of contaminants of concern included copper, yet no post-remediation samples were analyzed for copper. Please report on the establishment of the vegetative cover and provide a map of the capped area. KUCC is requested to maintain and protect the capped area against breeches.

(8) Bonneville Crusher - Little Valley Sediment Ponds (#95.03 and #B04): This site is within the area regulated by DWQ under the North Concentrator Ground Water Discharge Permit No. UGW350015 and was investigated pursuant to the NFSWP. KUCC, in the North Facilities Soils and Wastewater Treatment Plant Ponds and Site Removal Action SSID #4B, Magna Area Site Characterization Volume 1 dated July 1996, reports that the contaminants of concern are below the default commercial land use standards as stated in the NFSWP for arsenic, lead, cadmium, and selenium.

At this time, DERR is designating this site a conditional NFA status pursuant to KUCC's continued compliance with DWQ's permit. Recently, DERR became aware of KUCC's intent to remove some of the soils that have low levels of contamination. Please report on where this material was exported to and how the site was reclaimed.

(9) Bonneville Crusher - North Slope Site (#95.04 and #B10): The site is within the area managed by DWQ under the North Concentrator Ground Water Discharge Permit No. UGW350015, and was investigated pursuant to the NFSWP. KUCC reports in the North Facilities Soils and Wastewater Treatment Plant Ponds Site Removal Action SSID #4B - Summation Report dated May 2002, that the contaminants of concern are below the default commercial land use standards as stated in the NFSWP, for arsenic, lead, cadmium, and selenium. At this time, DERR is designating this site a final NFA status.